Aeromedical Considerations
Panel – Breast Cancer

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Disclosure Information
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I have no financial relationships to disclose.

I will not discuss off-label use and/or investigational use in my presentation.
Overview

• Background
• Risk factors – immutable
• Risk factors – modifiable
• Detection
• Diagnosis
• Staging
• Prognosis
• Treatment
• Aeromedical concerns
• Waivers
Background

- Breast cancer is a malignant proliferation of lobular or ductal epithelium of the breast. The proliferation may be hyperplastic, atypically hyperplastic, in situ carcinoma, or invasive carcinoma.

- In 2013, 232,340 women will be diagnosed with breast cancer and 39,620 women will die of it.

- In 2013, 2,240 men will be diagnosed with breast cancer and 410 will die of it.
Background (continued)

- The chance of a woman having invasive breast cancer some time during her life is about 1 in 8.

- The chance of a woman dying from breast cancer is about 1 in 35.

- Breast cancer is about 100 times less common among men than among women.

- Men and women with similar stages of breast cancer have a similar outlook for survival, although men are often diagnosed at a later stage.
Risk Factors – Immutable

- Gender
- Age, menstrual cycle
- Genetic risk factors
- Family history
- Personal history
- Race
- Dense breast tissue
- Radiation exposure
- Treatment with DES
- Race
- Age, menstrual cycle
- Genetic risk factors
- Family history
- Personal history
- Dense breast tissue
- Radiation exposure
- Treatment with DES
Risk Factors – Modifiable

- Parity
- Breastfeeding
- Recent use of birth control
- Menopausal hormone therapy
- Alcohol
- Weight
- Exercise
Detection

- Risk assessment tools
- Mammogram
- Clinical
- Ultrasound
- CT and MRI
Diagnosis

• Biopsy, grade, hormone receptor status

• Prognosis

• Microarray/reverse transcriptase PCR

• 3D mammography

• Technetium sestamibi scintomammography
Staging

• TNM

• Invasive/noninvasive

• Epidermoid vs. adenocarcinoma vs. undifferentiated

• Anatomic description
Prognosis

- Age
- Menopause
- Comorbidities
- Stage (nodes), histology, nuclear grade
- ER and PR status (molecular profiling)
- HER2 overexpression
- Ki67 tumor marker antigen
- Algorithms
- NCI SEER database
Treatment

- Surgical resection
- Chemotherapy
- Adjuvants
- Radiation
- Immune modulation
Aeromedical Concerns

- **Individual issues**

- **Breast cancer in early stages has almost zero risk of sudden incapacitation**

- **Treatment has local and systemic effects:**
  - mastectomy muscle and tissue loss, lymphedema, thoracodorsal nerve injury risk, scar tissue from radiation, chronic pain, chemotherapy-induced nausea, vomiting, blood clots, hot flashes, arthralgias, anemia/neutropenia
Waivers

• Aeromedical disposition and waiver submission should only be submitted after clinical disposition has been completed and all appropriate treatments have been initiated using best current guidelines and recommendations.

• Tumor Board
• Medical Evaluation Board
• MAJCOM
Waiver Documentation

• History – screening, initial presentation of sx and signs; include overall health, fitness prior to surgery (or prior to intervention), any other illnesses requiring and not requiring waiver
• Lab/pathology/radiology reports (AFI 44-102)
• Current physical – address deformity, lymphedema, range of motion/limitations (upper extremities and chest wall)
• Surgery/oncology consult
Waiver Renewal

• Interim history, including functional assessment
• Physical exam: focus on chest wall and axillae
• Oncology and surgery consult follow-up
• Lab results since last waiver
• Radiology results since last waiver
• Evidence of follow-up care c/w NCCN standards
AIMWTS

- 28 individuals w/waivers for breast cancer
- 9 FCII, 2 ATCs, 2 MODs, 15 FCIIIs
- 2 of the 28 were male
- Highest stage waived was IIB
- 1 DQ was reversed after treatment

- 5 DQs were permanent (1 FCIIIs, 3 FCIIIs and 1 MOD)
- 2 FCIIIs were waived while on anastrozole
Summary

- Breast cancer or a hx of breast cancer is disqualifying for all flying classss in the USAF, but the possibility for waiver exists.

- Aeromedical concerns are related to concerns with risk of sudden incapacitation and adversely impacted strength, endurance, performance, psyche, comfort, mobility, ability to properly/safely wear gear wrought by primary disease, as well, as treatment.
Bibliography


Questions?